Fisheries Information Systems Meeting Notes
Tuesday, November 18, 2003

Dave Van Voorhees, Director of the Division of Fisheries Statistics and Economics, Office of Science and Technology, briefly welcomed the participants and introduced the first two speakers.

Mike Sissenwine, NMFS Science Director

Dr. Sissenwine underscored how important FIS is, because NOAA depends on and stands for data. NOAA depends on access to data, quality data, metadata, and meeting data requirements. FIS is timely, because data need to be shared; data are a national asset; there are economies of scale; and there is accountability for the data at the national level. The bottom-line is: Are you sure the data is right? Dr. Sissenwine noted that although he had been in that Holiday Inn meeting room a number of times, he had not been there when the door was open to the outside terrace; he compared the fresh breeze to FIS.

Larry Tyminski, NMFS CIO

CIO Larry Tyminski noted that FIS is an outstanding opportunity to move things forward to more efficiently use resources. He noted that he is very impressed with recent FIS progress and acknowledged the hard work of Mark Holliday, John Hoey, Karen Foster Brown, Tina Chang, and Roland Tanner. He suggested that maintaining a sense of urgency and ensuring communication and collaboration are key to success. He also suggested that pursuing low-hanging fruit and early successes for momentum and engaging senior management through briefings and updates are critical factors in moving forward.

Dave Van Voorhees, NMFS Division Chief S&T
(See presentation on FIS website)

Dave Van Voorhees again welcomed participants to the meeting and led introductions around the room (see attendees list on FIS website). He briefly went over the agenda, meeting objectives, and ground rules for discussion. He also reviewed the contents of the meeting binder, especially noting the meeting entrance survey.

Fisheries Information System (FIS) Overview
Presented by John Hoey, NMFS NEFSC
(See presentation on FIS website)

John Hoey gave a brief overview of the background and history of FIS. The FY 1998 Senate Mark established the FIS mission: *To create an umbrella program that coordinates techniques to gather and disseminate data nationally while accounting for the unique characteristics of regional commercial and recreational fisheries.* Section 401 of the 1996 amendments to the Magnuson Stevens Fishery Conservation and

Management Act required NMFS to develop recommendations for implementation of a standardized fishing vessel registration and fisheries information system. That requirement was addressed in a December 1998 report to Congress: *Proposed Implementation of a Fishing Vessel Registration and Fisheries Information System* (also referred to as the "blue book" for its cover color – see PDF version on FIS website). FIS' business requirements are:

- have adequate information to manage fisheries regionally and provide summarized data on a national level, and
- answer who, what, where, when, why and how about participation in fisheries across regions using nationally established reporting standards.

FIS near term actions include defining core data elements for common systems, continuing planning and expanding initiatives in various areas, e.g., permits. FIS should result in a number of benefits, including leveraging of limited resources across partner agencies to deliver more detailed, timely and appropriate data. The draft minimum variable list for a national FIS includes, for each trip: year, month, state, port, species, pounds landed, landed value, gear, disposition, unique vessel ID, unique dealer ID, NMFS region or state detailed record ID, and fishing area designation (FAO grids, distance from shore – sub-trip areas in regional detailed databases). The keys to success are professional specialty groups (PSGs) working together and the need to focus on short-term targets to provide early successes. In response to questions about working together with states, Hoey noted that there are three stakeholders in FIS: NMFS, States and Fisheries Commissions and that we need to be more responsive and collaborate to make FIS work.

Fisheries Information System (FIS) Progress Review
Presented by Steve Koplin and Tina Chang, S&T
(See presentation on FIS website)

Steve Koplin, team leader of the commercial statistics team, Office of Science and Technology, gave a briefing on FIS progress to date. He noted that the Office of Science and Technology is pursuing a different approach by defining a clear vision and goals, facilitating the FIS process, sharing best practices, including regional participation, and working one step at a time. Dr. Hogarth's memo of February 24, 2003 (handout in meeting binders) set the stage for moving forward with FIS. It highlighted several problems that are being tackled by, among other things, enhancing coordination, data quality, and technology.

Steve went over the FIS mission, vision and goals (see FIS website). The FIS vision is:

The national FIS team works collaboratively to build a quality data management system to provide accurate, efficient and timely resources and services supporting fisheries data analysis and decision processes.

He also summarized progress, including planning work, regional and other projects, and PSG initiation through this meeting.

Tina Chang, FIS project manager, illustrated the common data analysis project and talked about other next steps, which include launching the PSGs to help define objectives to achieve FIS goals, drafting a detailed FY04 project plan, and coordinating with state agencies and fisheries information networks (FINs) for data collection and data sharing. Major deliverables for the next year include implementing the Southwest data collection system, metadata integration, a data quality assessment plan, and the initial scope of a common data element matrix – or FIS views.

Regional Invitational Presentations:

Benefits of a Cooperative Data Collection and Management Program
Presented by Dave Donaldson, GSMFC, Program Manager
(See presentation on FIS website)

Dave Donaldson talked about the structure and benefits of the Gulf States Marine Fisheries Commission Fisheries Information Network ("GulfFIN"). The problems addressed by the FIN include incompatibility or inconsistency among federal and state databases, insufficient data, limited access to data and the absence of a common forum to plan, coordinate and evaluate data collection and management activities. The GulfFIN mission is:

Cooperatively collect, manage and disseminate marine commercial, anadromous and recreational fishery data and information for the conservation and management of fishery resources in the Region and to support the development of a national program.

GulfFIN is managed by a FIN committee, which has geographic and other subcommittees and technical work groups. GulfFIN consists of two major components – ComFIN (for commercial data) and RecFin (for recreational data). Each component is structured by data collection, data management and outreach. GulfFIN coordinates closely with the Atlantic Coastal Cooperative Statistics Program (ACCSP) to ensure compatibility and comparability of its data collection modules. David summarized recent GulfFIN activities, including various sampling activities, the implementation of FIN Data Management System and trip ticket program development and operation.

Development of an Electronic Fishery Information Collection and Management Program in Alaska
Presented by Gail Smith, Alaska Department of Fish and Game
(See presentation on FIS website)

Gail Smith gave some background on Alaskan commercial fisheries and discussed the impetus for and organization of an interagency electronic reporting effort. There are five major fisheries off-shore – halibut, groundfish, shellfish, herring, and salmon. Groundfish and halibut reporting falls under three agencies – the International Pacific Halibut Commission (IPHC), National Marine Fisheries Service (NMFS) and Alaska Department of Fish and Game (ADF&G) – all with different cultures and constituents.

One of the drivers of the electronic reporting program was cost; ADF&G staff review and enter 300,000 fish tickets annually at a cost of 13¢ for each paper form. And fish tickets are not a timely tool for fisheries management. Hence, the three agencies are developing integrated, web-based commercial catch and production reporting. Web-based is better than a desktop system, but there is some uncertainty, given Alaska's rural landings can be challenging to gain access. The web-based system can help validate the data.

Processors have requested coordinated coding systems and non-duplicative reporting to the agencies. More than 50 percent of the required data elements are collected by at least two of the agencies. Also, fish tickets documentation requirements do not accommodate business activity sequence, so that operators would sign blank tickets in advance so they would not have to wait for the disposition data to be filled in by the dealer.

The Magnuson-Stevens Fishery Conservation and Management Act contains broad authority to pursue improved collection programs; the Act recommends that States, Councils, and Marine Fisheries Commissions develop integrated and non-duplicative information collection programs. The timing is good, because of the level of interagency cooperation, the need for timely trip level data, the growth of the Internet in Alaska and the success of other electronic reporting efforts.

A Steering Committee was established to explore feasibility, including performing a needs assessment and identifying challenges, which include agency coordination and program governance. The group plans an incremental implementation process build on what is learned at each stage. The current funding from a $750,000 Grant from Pacific States Marine Fisheries Commission will support full deployment of integrated groundfish reporting; additional funds will be needed to implement electronic reporting for the other fisheries.

In response to a question regarding agency access to confidential information, Gail noted that information about landings is provided to NMFS and that there is a broad range of fishery activities – shellfish, halibut, etc. that is provided to PacFIN and NMFS enforcement. How the information is released and consolidated is based on how the different agencies report it.

In responding to a question regarding data gap issues at the trip level, i.e., capturing economic data and additional data not captured off the fish ticket, Gail noted that they had discussed economic information at the interagency meeting and the potential of what could be collected, such as, crew size, cost of fishing, etc. Looking at those issues, there needs to be a larger blending of cultures or agencies to determine what they want collected and how to enforce it. Do we ask fisheries to provide us that information? When is the best time to collect the economic information? What mandates for collecting need to be made? These are some of the problems/questions that need to be resolved among the agencies before collecting this information.

The Atlantic Coastal Cooperative Statistics Program – A Success Story of Cooperative Standards and System Development
Presented by Mike Cahall, ACCSP Information Systems Manager
(See presentation on FIS website)

The Atlantic Coastal Cooperative Statistics Program (ACCSP) is a state and federal coastal fisheries data collection and management program for fisheries dependent data and is a central repository for Atlantic coastal fishery data (from Florida to Maine). ACCSP was formed in 1995 to address data deficiencies, duplication, incompatibility and inadequacies.

A Coordinating Council comprises state level and NMFS directors and makes decisions on policy, standards and budget, routinely through voting. The Operations Committee coordinates technical issues and runs by consensus. Technical committees and work groups manage standards and collection of data. There are minimum standards with at least minimum data transferred to a central warehouse. The priority is catch and effort data followed by more complex modules, e.g., socioeconomic.

ACCSP has approximately $1 million to run the program and $2 million to enhance fisheries collection. Proposals are evaluated by the Operations Committee, with final approval by the Coordinating Council, which is meeting in December to make decisions for 2004. ACCSP uses state of the art data management – a data warehouse with online analysis tools, with web-based entry on top of the warehouse through the Standard Atlantic Fisheries Information System (SAFIS), which was developed jointly with NMFS.

ACCSP started the National Fisheries Statistics (NFS) Project in Rhode Island to help develop and obtain fisheries statistics which were required by the state government. The program will be used by most states to help with government requirements. The project was just deployed in Maryland, and Connecticut and New Hampshire will be up in 2004.

Mike noted that ACCSP works because it is consensus driven, and everyone participates. ACCSP can serve as an Atlantic Coast anchor for FIS.

In responding to a question regarding real-time recording, it was noted that enforcement regulations in the northeast requires reporting that information 14 days with in the end of the month which is not nearly real-time recording. SAFIS can do e-mails and instant messaging if required.

FIS Data Modeling Approach
Presented by Susan Molina, SEFSC
(See presentation on FIS website)

Susan Molina gave an overview of SEFSC use of dimensional modeling. The data warehouse project has completed two phases between February 2002 and November

2003 – requirements and design and extract-transform-load – with $190K in funding from the Environmental Services Data and Information Management (ESDIM) program. SEFSC needs money for licenses to support systems and implement Phase III – data access and presentation.

The goals of the data warehouse include making data easily accessible. Susan noted that people analyzing data do not like a lot of relational tables. The data warehouse must be resilient to change, e.g., it can readily handle reporting form changes. It also must present information consistently, maintain confidentiality and support improved decisionmaking.

The goals of the Extract-Transform-Load (ETL) phase include building extracts from the source system, building the data staging area between source systems and the data presentation area, cleansing and standardizing data, and populating the data presentation area using dimensional modeling methods.

Susan presented the ETL Task Diagram, which has four components:
- Source Systems
- Staging Area
- Data Presentation
  - Consists of Data Marts, each based on a single business process
- Data Access Tools
  - Can use Access, Excel or whatever you are comfortable with

Facts (measurements), such as pounds at landing or number of biological samples, can be viewed by various dimensions such as dealer or species. There are three types of fact table measures: transaction, periodic snapshot, and accumulating snapshots.

Business users can access their information through the SEFSC dimensional model (schema) with simplicity and symmetry, because the data are easier to understand and navigate.

The system is being designed to support reconciliation of orphan and unknown records from different agency sources.

In response to a question regarding how long it takes to fix null records, Susan said the data owners are committed to fixing their own data; they are committed to helping to cover gap of data dimensions.

Highly Migratory Species (HMS) Data Coordination Efforts in the Southwest and Pacific Islands. Presented by Al Coan, SWFSC
(See presentation on FIS website)

Al Coan presented a SWFSC-SWR-PIFSC-PIRO data coordination process for Highly Migratory Species (HMS). This motivation for this project was that you could not tell what was being collected and who had collected it. The director realized that the staff with institutional memory were reaching retirement soon. The project objective was to

establish a HMS data management process to coordinate compilation and dissemination of HMS data to meet NMFS obligations – both domestic and international.

The project is organized by HMS data coordinators (1 each from SWFSC and PIFSC), working with a data coordination team (4, representing each center and region). There are two working groups – data catalogue and data standards/guidelines. There is an annual meeting of data coordinators and HMS staff, and working groups use regular teleconferences.

Nine 2002 issues were identified:
- o Data catalog.
    - What is the data?
- o Submit Data
    - From all over the world
- o Holes in Data Consistency
    - Could be useful areas to apply standards, even though people don't like them
- o Confidentiality
    - Three or more rule
        - If monthly summary listed only 2 shipping vessels, data removed
    - Confidentiality is a significant issue.
- o New data set development
- o Disputes with old data
- o Policy Conflict
- o Access to IT staff
- o High Seas Fishing Compliance Act (HSFCA) data collection

For reference, the SWFSC data portal website is: swfscdata.nmfs.noaa.gov

2004 issues include: tools, data management policies, selling HMS coordination, and state data sets.

Designing and Managing Fisheries Data Systems that Support the NOAA Data Quality Act: A Case Study Using the Hawaii Longline Observer Program.
Presented by Karen Sender and Janet Pappas, PIFSC/PIRO
(See presentation on FIS website)

Karen Sender, a contractor through the University of Hawaii, presented data system improvements that she and her NMFS colleague Jan Pappas had developed for the Longline Observer program. They were motivated to pursue changes, while still doing their daily jobs, because of poor data quality, inadequate documentation, poor communication and other issues. Karen presented all of the components of data management and their interplay, noting, for example, that you can't have a data collector arbitrarily design a collection form without talking to the database administrator and end

users. She also outlined various data management roles, noting that data stewards take care of the data but don't own it.

Their mission is to ensure access and dissemination of quality Fisheries data and metadata to appropriate users in a timely manner. They looked for data management resources that already existed and tapped ACCSP reference codes and definitions and ultimately found out about the FIS effort as well. Among several ground rules, they committed to data quality and data transparency and they would only accept a data element if there was a data steward for it. Also, their goal was to keep it simple, so that it would be usable.

Lack of communication between role groups were causing functional problems. The system data set for the program was in crisis: data were collected and stored in a Microsoft Access database, which was impossible to maintain. Data transfer was arduous. The most critical issue was end user complaints on data quality. To date, they have improved data quality and communications and have established a series of applications that facilitate data entry, data element registry and data validation. Also, users can raise an issue on a piece of data and propose a correction. Administration can go in and review issues and denote if issue is resolved or not. The statistics from the data issues manager are useful for determining opportunities for process improvement.

Karen's final thoughts: Transparency of Data Quality Act is important; Develop policies and guideline for data management; Data is at the foundation of what used.

Why Data Migration Projects Fail and How to Guarantee Success.
Presented by Joe Hudicka, FIS Data Architect. Demonstration given by Eric Pilkington, FIS Data Analyst
(See presentation on FIS website)

Joe Hudicka defined data migration as the set of processes that retrieves, transforms and transfers data between two or more applications. Over 67% of migrations finish late because of ETL testing and mapping issues. Migrations cost an average of 14 times the planned amount.

Some data migration obstacles are: data source designs (relational vs. hierarchical); Limited data validation enforcement; and the general assumption that data are good. In the traditional migration approach, there are 3 phases: scope, transform and load, which Joe noted often translate into, code, load and explode. Using a more linear approach, data are profiled and cleansed earlier: scope, profile, cleanse, transform and load. A linear approach can reduce the cost of data migration by as much as 60%. Keys to successful migration are separating the good data from bad and separating cleansing from transforming.

Eric Pilkington then demonstrated software *(dfPower Studio v. 6.0 manufactured by Data Flux)*, showing a SWR Harpoon Fishery Data Quality Analysis. The analysis views data

structure to answer key questions; looks at metadata; matches patterns; evaluates data adherence to standards; and identifies redundancy. Data profiling is a fundamental, yet often overlooked, step that should begin every data-driven initiative. Identifying data quality issues at the front-end of a data driven project can drastically reduce the risk of project failure. This information is essential in helping us to determine not only what data are available, but how valid and usable those data are.

Just like a mechanic going through a series of diagnostic steps for a car, we start at the beginning, conducting structure, data and relationship discovery. Then we perform analysis and match functions.

Structure Discovery- Does the data match the corresponding metadata? Do the patterns match the expected patterns?

Data Discovery- Are the values complete and accurate?

Relationship Discovery- Does the data adhere to required key relationships across columns, tables and databases? Are there redundant data?

Analysis-
"Analysis" is one of the core components of the dfPower Studio package. The enterprise's own data is used to generate the business logic that will be applied, ensuring that an enterprise can not only apply generic data quality standards to achieve better business intelligence results, but also resolve issues that are unique to the organization.

In running data profiling and analysis, we are interested in knowing:
* Whether or not our data consistent and accurate?
* Are pertinent standards followed?
* Are data separated and parsed into useful fields?
* Are there patterns within a given dataset or combinations of datasets?

If any of our findings do not meet our expectations, we can do an array of things to better our dataset-

* We can add missing data, correct data, integrate and roll-up data in the event we have redundant or duplicate data.

* We can essentially establish business rules and apply them directly to our dataset/scheme or we can parse them separately, preserving the original data and adding new fields to our dataset to see changes, match codes and definitions.

Match -
"Match" is a data analysis tool that automates the process of identifying duplicate and near-duplicate records that can threaten the integrity of an organization's data. We can automate the process of identifying duplicate and near duplicate records that can threaten data quality. We can also use matching to standardize and establish rules to be applied to

a given field or dataset in general, and we can use matching to generate codes upon which we can query our data later on during the discovery process.

In response to questions, Eric noted that dfMatch analyzes data redundancy and match clusters. The report's "other" category is patterns not recognized by the computer. Eric said to look at similarities in the data: Do not want to jeopardize the initial data. Therefore, the data are parsed. The data owner is responsible for correcting data.

Asked how easy is it to resolve the more complex structures, such as the Robert Smith example, Eric said that you need to provide a rule that will apply to all data. For example, last name similarity report then parse to roll up. Rule based on a small set of rules to apply. Eric said that you can set up a name match using your own rule base.

When asked about the time to use the tool, Eric noted that for the interface, it is easy to come up to speed and that you need time to get acquainted to use the tool to analyze and apply rules. However, if you know the problems, it is really worth spending the money. The tool can distinguish suspicious data if set up in the rules, and it can analyze multiple data sets. He noted that the tool can be tested, using real data. Joe and he noted that they do not sell the product, so they could not provide any cost information.

An overview of Geospatially linked NWFSC Salmonid Database System – Shared Lessons Learned and Best Practices. Presented by Richard Kang, Northwest Fisheries Science Center (NWFSC)
(See presentation on FIS website)

Richard Kang, Salmon Data Management Team Leader, NWFSC, asserted that having the right data is not the issue – knowing that you have the right information, and knowing it at the right time is the issue. The Salmon Data Management Team partners with those "_ologists" who own the data and promotes collaboration, communication and coordination using e-Gov principles and enterprise-wide architecture framework to share and access internal and external information and data. Projects fail because there is no project management. You need a team with critical mass.

The salmon data management methodology is a cascade/waterfall approach: Awareness, Assessment, Design/Development/Testing, Transition/Training, Deployment, Maintenance, Project Planning, Documentation, and Independent Validation and Verification. The Salmon Data Management Team built 4 prototypes in 2 years:
- Oregon Watershed Enhancement Board (OWEB) Prototype
- NWFSC GIS Spatial Layer
- NWFSC Salmonid Database Management
- NWFSC Collaboration Website

From a user perspective, there is a notion that relational databases are difficult to deal with, but you can glue information back together to a view so that you don't have to deal with a lot of tables. Scientists don't know how (and don't have to know how) to use GIS, but they want to view multiple layers of data.

Discussion Session: FIS Issues and Opportunities. Facilitated by Mary Holland.

The large group was broken into 5 groups of 8 to 10 each. Each group was given approximately 15 minutes to discuss FIS issues and opportunities and come up with their top 5 issues and top 5 opportunities – and then present them to the rest of the groups.

The groups' issues and opportunities were:

Group 1 – Presenter Al Coan:
FIS Issues:
1. Legacy Data Migration
2. Limited Resources
3. Funding
4. Cross Regional Collaboration
5. Commitment Leadership Support

FIS Opportunity:
1. Upgrades in technology
2. Standardization of code
3. Metadata
4. Regional Collaboration
5. Permit Systems
6. FIS linked to regional initiatives

Group 2 – Presented by Jan
FIS Issues:
1. Need to develop collaboration tools
2. Funding
3. Need Leadership "buy in"
4. Cultural Change
5. Better understanding of FIS, Goals and purpose

FIS Opportunity
1. Building technical expertise
2. Demonstrate NMFS goals and corporate mentality
3. Moving toward guidelines and standards

Group 3 – Present by Tim Haverland
FIS Issues:
1. Data confidentiality (Share data between regions)
2. Scarce resources funding people
3. Lack of Coordination
4. Need to define business practices cross regional and national levels
5. Leadership – needs strong vision
6. Need for "buy in" by management from all levels and partners

FIS Opportunity:
1. Build cross region and national views
2. Cross region collaboration make better use of resources
3. FIS process clear scope where headed and need to go
4. Portability of develop systems common standards and tools that are portable
5. Standards (Establishment of standards)

Group 4 – Presented by Jessica
FIS Issues:
1. Insufficient information of what people are doing
2. Understanding of FIS is not clear
3. Data Ownership – authority to edit data sets
4. Momentum/Managers

FIS Opportunity:
1. Management support at all levels
2. Better data
3. Data sharing portability funding
4. Software and data design sharing
5. Help regions to support partners "need national incentive"
6. Hear other people issues that give a sense you are not alone

Group 5 – Presented by Susan Molina
FIS Issues
1. Lack of data and gaps
   - IT – Too much focus on data management.
   - Need to focus on data collection
2. Lack of corporate vision
   - What FIS is trying to do?
3. Lack of leadership
4. Poor communication with regions
5. No internal control system
FIS Opportunities
1. Improve data collection
2. National permit system and vessel registration for tracking
3. Expand data collection
4. Educate middle managers about FIS
5. Tie national objectives with regional objectives for better "buy in"

Recurring themes included the lack of or need for leadership and the need to improve or assure communication and collaboration. The next morning, the issues and opportunities were grouped into general themes for use the next day.

Entrance Survey

Participants were given approximately 15 minutes to complete an entrance survey. The results were summarized that evening for use the following day.

Fisheries Information System (FIS) Meeting Notes
Wednesday, November 19, 2003

Welcome & Announcements:
Tina Chang, FIS Project Coordinator
(See FIS Mission, Vision and Goals (updated) on FIS website)

Tina Chang began the day's session by asking if there were any questions or comments about the FIS mission, vision and goals, which had been presented the prior day.

In response to a question whether the second goal included data from treaties and acts, Steve Koplin suggested including the word "international" in the statement. Addressing a concern that
there is nothing listed in the goals in relationship to PACFIN, AKFIN, etc., Steve noted that
in the first goal, the FINs are incorporated in the wording "regional/state repositories, ...support fisheries stewardship."

In response to suggestions that fisheries commissions, universities and other entities who contribute data be referenced, Tina noted that they just wanted to shorten the wording of the goals but we can expand on them.

For the second goal, "Integrate" was flagged as a never-ending goal unless it defines "what is to be integrated," such as, technology, software, etc. The suggestion was to use the word "Consolidate": i.e., "Consolidate information collected" for goal #2.

Funded FIS FY03 Project Reports

I.   *John Witzig and Roland Tanner, NERO*
(See presentation on FIS website)

NERO's FY 2003 funded projects are a Web-based Dealer Permit Renewal (dealer repository covers from Maine to Guam), which they expect to roll out in late spring or early summer, and an Action Tracking System. The "monsters" for FY2004 are various fisheries management plan (FMP) requirements, including Amendment 13 to the Northeast Multispecies FMP, which, among other things, mandates dealer electronic reporting and requires eventual electronic vessel reporting,

Issues that they are encountering include: patchwork of existing systems; disperse responsibilities; data access (fisheries statistics not allowed access to VMS); lack of documentation; and indifferent management. They view FIS funds as a possibility.

II. Martin Loefflad, AKFSC

Alaska focus is data for decisionmaking regarding groundfish issues. They are moving from paper-based to electronic reporting, with an ESDIM grant of $300,000 over a 3-year period. Electronic reporting will facilitate quicker access to the data by clients.

Observer Data Entry System – Today
- Transmit data daily and on a database
- 220 Observers sending data
- View error script from observer data
- Application for enforcement team to view

Martin presented his view of the key issues that a fisheries information system manager must address:
1. Program Relevance
   o Are we doing the right thing?
   o Are we collecting the right data?
   o Are we collecting too much of one type of data and not enough of another?
2. Program Competence
   o Are we doing the right thing right?
3. Skill Development
   o Do we have people with the right skill set?
4. Managing change
   o System very complex
      ▪ Make change to collect the right information for management
      ▪ Internal process meeting needs of the agency
5. Confidentiality
   o Don't underestimate conflicts and problems of confidentiality
6. Resources
7. Biases
   o Industry efforts to bias data received

FIS fits into two areas:
1. Data system design and integration
   o Lacking documentation
   o Last year put in grant for money for documenting
   o Currently in the exploratory phase
   o Metadata critical
2. Expertise in electronic reporting

In response to a question regarding observer coverage, Martin said that for boats longer than 125 feet, an observer is on the boat at all times – sometimes 2 observers. For 60-125 feet, 30% of the time, and for less than 60 feet, no observer is needed. When no observer, information is captured from the fish ticket at landing.

Asked to elaborate on the challenge of metadata, Martin said they would like to get an Oracle person to review data, documentation and problems. They have not captured the data flow in a model. Tool users can drill down to level of detail.

III. Al Coan, SWFSC
(See presentation on FIS website)

FIS Projects include metadata, evaluation of database design, permits, cannery receipts database and electronic data reporting under FMP. For metadata, the center is working with the Integrated System Design PSG on minimum metadata elements. A student is helping to gather metadata. ST is helping with evaluation of HMS database design and assisting with migrating legacy data. For the permits database, the center is defining specifications and enhancing communications links.

IV. Robert Skillman, PIRO
(See presentation on FIS website)

The Pacific Island Regional Office (PIRO) funded FIS project is a fishing permit database system. FIS has funded network infrastructure, including a switch stack, UPS, DNS cache server and firewall. Training has been completed for crystal reports and is to be scheduled for the firewall. Bob Skillman listed the current permit types and application process.

In response to a question about the applicability of the ST permits system, Bob said that there was a demo of it in Southeast, but that it needed some more features in its processes.

V. Karen Sender, PIFSC

Karen Sender, Pacific Island Fishery Science Center (PIFSC), said that FIS funding helped with work on observer system.

Critical Issues
o Getting enough contractors to have independent contracts to review database to meet our roll-out date.
o Getting the data out of the system:
  ▪ Creating user views

- Allowing users to get data they need (confidentiality)
- Supporting users to get data out with ease
- Applying technology and linking the 3 data sets for quality checks and resolving data errors
- Providing a timely way of linking data set to assist in resolving data problems
- Historical Auditing Tables
  - Combine an automatic statistics report
  - Notification e-mails of endangered species, etc.
- Develop a metadata repository
  - Online look at storyboard at end of presentation
- Start capturing all information on how you develop all parts of the data system (not just the data sets)
  - Collecting the data
  - Disseminating the data
  - Processing the data

They are looking at SWFSC for adapting longline fisheries systems and are working as a team for cost effectiveness and efficiency. PIFSC looked at a South Korea system and was impressed with transparency of the system, documentation, form use and the database concept.

VI. Jamie Kessel (NWFSC)

NWFSC is using FIS funding to develop an electronic fish catch system for logbook data -- integrated and stored in Oracle. They have built forms for the prototype, which was to run starting in late November for 6-8 weeks. They are working with California and testing fish ticket landing receipts.

VII. Susan Molina (SEFSC)
(See presentation on FIS website)

SEFSC is using FIS funding for reconciliation of state and federal logbook and trip ticket data and have worked with Dr. John Hoey and Daryl Bullock on the project to complement the HMS data reconciliation program, which attempts to compare records where there is overlap.

The project will expand the existing pilot project to include and compare more data from GulfFin and ACCSP and trip ticket data from North Carolina, South Carolina, Georgia and Florida. It will enable the view of a complete trip record by combining variables captured in different systems.

Key Project Milestones and Deliverables include conceptual design, integrated data model, web-based user interface, web-based maintenance and monitoring, formal FGDC compliant metadata and web-based user documentation.

VIII. Jessica Gharrett, AKRO

AKRO is focusing on its IFQ (Individual Fishing Quota) System (Restricted) – a permit-based computer system. The groundfish system with hard TACS (total allowable catches) is based on industry reports and was created 15 years ago. CORE (integrated regional database) is a system that shares information on permits, gear, vessels, etc. The benefit of the system is that management programs can be added on such as the observer system and translation program.

> *Individual Fish Quota (IFQ) program covers two species – halibut and black hawk sable fish. The program has thousands of fishermen, and it needed a real time account for posting to the system. They made electronic reporting mandatory, and the quota share transferred and account statistic can see debit of owner.*

For the IFQ Program fishermen are issued a card (like a debit card), and the harvester swipes the card and enters a PIN. Information is entered by the buyer and uploaded real-time**.** Fisherman can see balance but cannot view landing data. The hard bill is sent to the permit holder and skipper and is due Jan. 31st of the following year. He can pay online using pay.gov working with NOAA finance.

(see www.fakr.noaa.gov [Fisheries Alaska Region])

Introduction of the Professional Specialty Group (PSG) Concept
Presented by Roland Tanner and Tina Chang
(See presentation on FIS website)

> *Professional Specialty Groups (PSGs) will help achieve the goals of FIS. It is composed of technical expertise – in both business and information systems. The intent is to have representatives from every region in each group. PSGs are groups that are committed and have longevity, unlike teams that are short-term and for a specific purpose until resolved. They can tackle manageable pieces of FIS.*

PSGs work through teamwork to develop a set of objectives from the PSG meetings. They meet regularly and build consensus on business issues and the best technology. The PSG meeting objectives for Thursday afternoon and Friday morning are to identify objectives that match with FIS goals and to assign actions for follow up from the meeting.

Richard Kang commented that PSGs need to integrate the people who will be using the system. They need to be at the table, and they need to resolve their issues regarding the system. Lessons learned from PSCL are (1) create a fisheries approach; (2) prevent failure scope and (3) remember, "Who is the customer"

John Hoey added that that was true. Electronic Reporting is going to solve our problem. However, we need to get the fishermen to understand how to use it. Older fishermen may

be more hesitant to use, and we need to allow them to continue processing their data as before.

Tina Chang noted that the PSG list is not a complete list (65 people listed on it). Each region has a representative for their people. Doug Turnbull added that a PSG is an outreach vehicle to the user groups, FINs, states, and everyone who is interested and who is here. PSG is the central activity and may have subcommittees.

Quoting the FIS Report to Congress (RE: Fishery Vessel Registration pg. 3, 1st paragraph "Resolution of arising issues among the state sustainable fisheries.." see website), Dave Freeze
Said FIS needs to do a better job of bringing in the partners.

John Hoey provided some background. Bill Hogarth is working on this through this mandate. Need to have a more formal collaboration and control of how the process will operate. Need active involvement of the regions to share technology and to get additional funding for very large and diverse projects. Must show effective operation.

Roland Tanner noted that PSG is the concept that we want your expertise and help to get the answer. We want to catalyze on your expertise for the answer. PSG is a concept. The issues require us to fill in the details.

When asked regarding the possibility of additional PSG participants, Tina Chang said, yes, this is just a starting point.

It was suggested that the second PSG, Landing and Logbook Reconciliation, needs to include observer reconciliation of records. John Hoey said that there can be subsets under the groups, reconciling various sources. In addition, state report trips and match data with federal logbooks. Make it trip based. Need RITCs (Regional Information Technology Coordinators) to help get message to CIO and collaborate efforts – state, federal, etc.

Joan Palmer underscored the need to coordinate with the CIO. RITC just completed a detailed IT inventory list for the CIO. Get the IT Inventory list from the CIO and do not try to replicate it here because will not have all the information you need available to give a sound report.

Susan Molina suggested capitalizing on what the RITC does and put FIS on the agenda. Coordinate and piggy back something the RITCs have, such as, conference calls, emails, etc. There is one RITC from each each region and science center.

Regarding FIS funding, Dave Van Voorhees said that there is no line item on the report to the Senate regarding FIS. However, the House report did have a line item for $4 Million. The federal government is on the second continuing resolution and they will be trying to resolve it on Sunday.

Richard Kang suggested that there should be some contingency plan if the budget is zero – that the group should not just wait for the budget. Asked how a budget might be spent, Dave Van Voorhees said that people would submit proposals, and they will be reviewed and determine the amount of funding they will get.

Fisheries Information System (FIS) Meeting Note
Wednesday, November 19, 2003

1:00 – 4:30 p.m. FIS Implementation Strategies, Discussion Session
Facilitated by Mary Holland

Time was set aside on Wednesday afternoon for general group discussion regarding the approach to implementing the FIS. The discussion agenda was set based on the meeting entrance survey results and the common themes of the discussion regarding FIS issues and opportunities on Tuesday afternoon. One of the discussion goals was to help build a tangible list of action items.

The discussion agenda was:

- Introduction
- Survey compiled and summarized
    - See Eric's handout
- Issues/opportunities
- Resources
- Goals - National and Regional
- Leadership (Problems and Solutions)
- Communication and Collaboration
- Roles and Responsibilities
    - Who else needs to be engaged and what is your respective role?

Dave Van Voorhees spoke first about resource issues. He said that although the FY 04 FIS funding level was as yet unclear, the Fisheries Statistics and Economics Division would develop and share clear RFP guidelines so that the process would be in place when Congress made final funding decisions.

Eric Pilkington presented summary results of the entrance surveys that were completed on the first day of the meeting. Most participants felt that FIS was very important to achieving regional and national NMFS goals. Most were also at the meeting to learn more about FIS as well as to contribute to building it. They saw lack of funding as one of the issues that their regions are experiencing with respect to data collection, management and information sharing.
(*See entrance and exit survey summaries on the FIS website*)

In the course of discussion, there was general agreement that the posters of the mission, vision and goals would be useful to have when participants go back to their facilities and promote FIS. Tina Chang and Tim Haverland were to follow up on it. At a minimum, the

posters will be posted on the FIS website (*See mission and vision poster on the FIS website*).

Mary Holland facilitated the group discussion. To kick off the discussion, she asked:

How important is it for regional goals to be consistent with FIS national goals?

Flip chart notes are available from the discussion, but the discussion evolved into a few major themes. There was general acknowledgment that regional and national goals ideally would be compatible, and, as an extension of that, that it would be desirable to have in place guidelines – or a "cookbook" – for developing a data system. There was some discussion of a centralized location to call or contact for guidance regarding development/implementation steps, available technologies, and available applications. It was noted that there is an information system development process in place for architecture projects.

This discussion led into an exchange about the role of the Chief Information Officer (CIO) within NOAA Fisheries. Among the responsibilities listed were providing guidelines and policies, focusing on information technology components, and sharing software. The group discussion underscored the importance of collaborating with the CIO to achieve the goals of FIS.

It was suggested that the FIS team be certain to communicate regularly with or periodically brief the regional information technology coordinators, the National Information Management Board, and the Science Board.

Discussing who should be at the table for FIS/PSG activities, suggestions included: customers, stakeholders noted in FIS report to Congress; partners; CIO collaboration; and regional information technology coordinators (RITCs) through their regular meetings.

Each group reporting back on Tuesday afternoon after a discussion of issues and opportunities cited lack of leadership and the need for management buy-in as key issues, so the next discussion question was:

If FIS leadership is a problem, what is the solution? Either in terms of leadership suggestions or criteria for successful leadership?

The discussion was round robin; each person was asked to try to comment but was allowed to pass. Flip chart notes are available from the discussion; the following summarizes some common points.

Several members of the group suggested that leadership is something that you assume and that the group assembled constituted the leaders for FIS – that they would be the ones to make it happen, working from the bottom up. Nonetheless, many felt that clear management support at Dr. Hogarth's level or at a senior level would be important for FIS to succeed. That leadership support could be shown through articulating or

reinforcing a vision and providing resources. It was viewed as important that managers at all levels, at a minimum, not put up any road blocks and support the time investment of those participating in FIS projects. It was noted that funding helps with buy-in.

Several participants also noted the importance of keeping headquarters and regional management informed. Suggestions included briefing their respective managers about the meeting when they returned to the office. Other specific suggestions included dedicating a full-time project manager and establishing a steering or coordinating committee.

The Tuesday issues and opportunities discussion also emphasized the need for improved communication and cross-regional collaboration; hence the following question was discussed next:

What are some specific ideas to improve communications and collaboration?

The group broke into 5 smaller teams to discuss ideas. Each group then presented its top recommendations to improve communications and collaboration.

Group 5 – Presenter: Doug Turnbull

- News Letter
- Chat Groups
- FIS Posting on Website (2 – Internal and External)
- Schedule Virtual and Face Meetings periodic PSG group
- Retreats
- Lunch and Learn
  - Brown Bags – less formal
  - Marketing – Get the word out
- Presentations – in Maui preferable
- Tips and Tricks
- FIS Technical Network
  - White Papers
  - Solution Request
  - "Query-able" Repository
- Personnel Detail (Swapping details with people out side agency)
- Adapt/Adopt Working Models

Group 4 – Presenter: Eric Forney

- Groove – web enable tool that allow mangers upon committees
- Key contact person or point of contact (POC)
- Target Data Management
- BLOG – Web log is shareware and a plug-in to search on a variety of topics, article – point of reference.

- Conference calls (weekly/monthly)
- Annual or Semi-Annual Meeting to discuss critical issues

Group 1 – Presenter: Dave Van Voorhees

- Make sure all players are at the table (FINs, enforcement, etc.)
- Key players will change by PSG (Economist, Social Scientist, Statistician, IT, etc)
- Distributed approach to collaboration
- Use web-enable dissemination of information (glossary, list of participants, etc.)
- Person-to-Person communication formally schedule for sharing ideas
- Confidentiality issues will impose constraints

Group 2 – Presenter: Roger (Reggie) Howe

- FIS Web-based form
- Face-to-face peer visits
    - Meetings – Ad hoc, annual, etc.
    - Budget - Travel
- FIS posters to local level
- Collaborate SW Suite and tools

Group 3 - Presenter – Susan Molina

- FIS web page – timely post ASAP
- Collaboration Suite
- Develop concise mission/vision
- Contact list with special skills (Collaboration team)
- State/Federal Forum Action Plan -> Present FIS through existing groups
- FIS List Group Server
- Develop clearing house of all application – make available over web
- Present FIS to Executive Boards/Leadership Council
- Proposals and Disposition available on-line
- Communication between FINs (eg., PacFIN, RecFIN, GulfFIN, ACCSP) and FIS

There was general interest in pursuing the use of effective web tools for communicating and collaborating. Tina Chang and the Office of Science and Technology Information Technology team will review and develop website options. Everyone agreed that they would like to have a set of color posters articulating the FIS mission, vision, and goals; Tim Haverland agreed to investigate the feasibility of sending out hard copies. At a minimum, they would be posted on the FIS website. Some ideas, e.g., making sure the right players are at the table, will be pursued by the PSGs and individuals in addition to any national team pursuit. And other ideas, e.g., the newsletter, still need a champion.